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PATENT
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IN THE U.S. PATENT AND TRADEMARK OFFICE

In re application of

Reijo LYLYKANGAS et al.

Conf. 3661

Application No. 10/072,906

Group 1764

Filed February 12, 2002

Examiner H. Tran

METAL REACTOR CELL AND MANUFACTURING
METHOD THEREOF

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Assistant Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

June 30, 2006

Sir:

Appellants request a pre-appeal brief review of the final rejection in the above-identified application. No amendments are being filed with this request.

A Notice of Appeal is filed herewith.

The review is requested for the reasons advanced on the attached sheets.

Respectfully submitted,

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REASONS IN SUPPORT OF REQUEST FOR REVIEW

A pre-appeal brief review is respectfully requested because the rejections of the independent claims include a clear factual error, as explained below.

Claims 27-31 are pending. Claims 27 and 31 are the only independent claims and both are the subject of the present request for a pre-appeal brief review.

Claims 27 and 31 define a method of manufacturing a metal reactor cell that has overlapping corrugated sheets and a housing. The method includes preoxidizing the overlapping corrugated sheets, and after the preoxidizing step joining the preoxidized sheets to each other and to at least part of the housing by resistance welding. Claim 27 includes the further provision that the preoxidized sheets are simultaneously joined to each other and to at least part of the housing by resistance welding. Support is found in the specification at page 4, fourth and fifth paragraphs.

The factual error in the rejections relates to the step of joining the preoxidized sheets to each other and to at least part of the housing by resistance welding, where the preoxidizing step occurs before the joining step. The prior art discloses that the sheets may be oxidized, but in the prior art the oxidation occurs after the joining step (for the purpose of providing a hold for a catalyst).

Claims 27 and 30-31 were rejected as unpatentable over USUI 5,620,666 in view of KONO et al. 5,403,558 and CHAPMAN et al. 4,331,631.

USUI does not disclose joining preoxidized sheets to each other and to at least part of the housing by resistance welding, where the preoxidizing step occurs before the joining step. The reference discloses a method for joining the sheets beginning at column 5, line 42 and does not discuss adding an alumina layer until column 8, lines 11-19. There is no indication in the reference that the sheets are oxidized (the alumina layer) before they are joined to each other, and the assertion that the reference does disclose preoxidation before joining the sheets is a factual error.

By way of further explanation, USUI discloses a method in which the sheets are joined by brazing, or various welding methods (column 7, lines 36-42). The reference does not distinguish the brazing from the welding methods. As is known by those of skill in the art, in order for brazing to work properly, the surfaces to be joined must be free of oxides. The surfaces are cleaned and a pickling bath may be used to dissolve oxides chemically. The pickling bath is especially effective on metals like aluminum that are prone to oxidation.

USUI also discloses (column 8, lines 11-19) that the sheets may contain a layer of alumina (Al_2O_3). As noted

therein, the alumina layer is desired because it can hold a wash-coat layer on which a catalyst is supported.

One of skill in the art, having knowledge that brazing requires an oxide-free surface (and noting that the reference does not distinguish the welding methods from the brazing) would not add an alumina layer to the sheets before brazing as this would make brazing impossible. Clearly, the step of adding the alumina layer occurs after the sheets are joined, not before.

KONO et al. and CHAPMAN et al. were relied upon for other features and do not make up for the shortcomings of the primary references.

Claims 27 and 30-31 were also rejected as unpatentable over MATSUMOTO 6,288,008 in view of KONO et al. and CHAPMAN et al.

The argument here is basically the same as the rejection based on USUI; MATSUMOTO also does not disclose preoxidation before joining the sheets as claimed.

MATSUMOTO discloses (column 14, lines 14-18) that the sheets can be oxidized to support a catalyst thereon. Significantly, the reference also states that the surface treatment is carried out after the brazing step (column 13, lines 17-19). There is no indication in the reference that the oxidation takes place before the sheets are joined to each

other, and the assertion that the reference does disclose this step is a factual error.

Claims 28-29 were rejected as unpatentable over USUI or MATSUMOTO in view of KONO et al. and CHAPMAN et al. and further in view of CAIRNS et al. GB 1 546 097. These claims are allowable for reasons set forth above.

In addition, the Examiner objects to the specification. It is not believed that these objections can be maintained and their withdrawal is respectfully requested because they each include a factual error.

The Examiner questions the "straight cells" at page 1 line 20. As noted at this passage, in the prior art "ceramic reactor cells are only made in form of so-called straight cells." Thus, the passage explains that straight cells are a form of reactor cells. The question posed by Examiner is answered by the context of the passage itself.

The Examiner questions where the welds 10 to the housing 7 are shown, with reference to page 8, lines 20-21. This question also is not understood because this passage states that the corrugated sheets are connected to the housing 7 by welds 8, 10 and these welds are shown in Figure 1. One of skill in the art will see that welds 8 and 10 are on opposite parts of the housing 7 and that they connect the sheets to thereto.

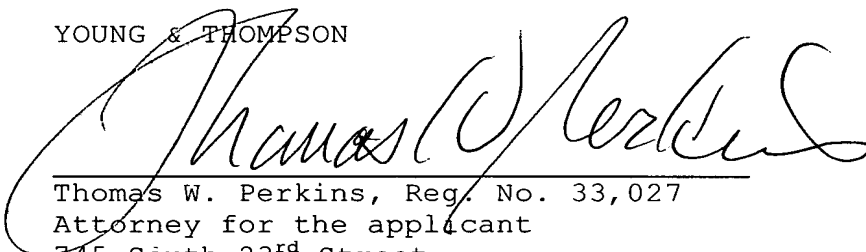
The Examiner also rejects claims 27-30 under §112, first paragraph. Withdrawal of this rejection is respectfully requested because the simultaneous welding in these claims is discussed at page 6, last paragraph.

Each of these formal objections is based on factual error and should be withdrawn.

Thus, the rejections of record include a clear factual error and cannot be sustained and should be reversed, and such is respectfully requested.

Respectfully submitted,

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